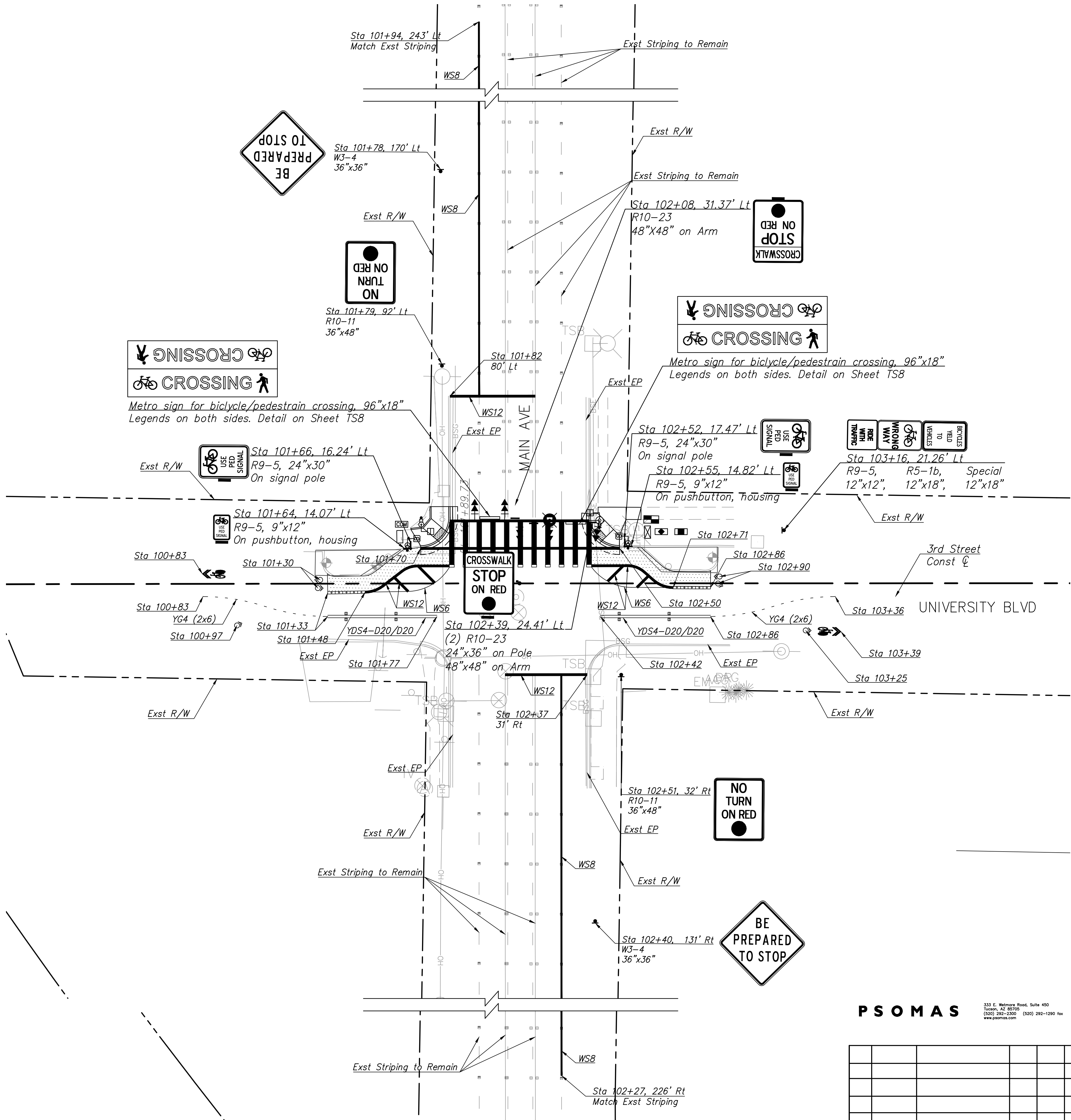


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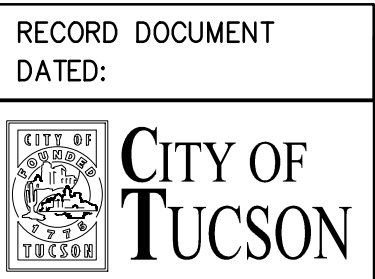
- Existing longitudinal striping, arrows, symbols, and legends shall remain unless noted otherwise.
- Existing longitudinal striping that would extend into new crossings on north side of intersection or beyond new stopbar on south side of intersection shall be obliterated.
- See pavement marking details for dimensions of pedestrian and bicycle crossings.
- All existing signs shall remain unless otherwise noted.



UNIVERSITY BOULEVARD / MAIN AVENUE
SG05 of SG10

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RECORD DOCUMENT DATED:				DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION			
				3RD STREET BICYCLE BOULEVARD MAIN AVENUE TO WILMOT ROAD			
				Intersection Signing & Marking Sheets			
Approvals		Signatory		Date		Approved _____ 20 21	
						TRANSPORTATION DIRECTOR	
						REF. _____ SCALE: _____	
DRWN. BY <u>RCS</u> 20 21		DSGN. BY <u>RCS</u> 20 21		CHKD. BY <u>KT</u> 20 21		PLAN NO. <u>U-2019-016</u>	

NO.	DATE	REVISION	BY	CHKD.	APPR.

CITY OF TUCSON TRAFFIC SIGNAL GENERAL NOTES, continued

- ## CONDUCTORS





















- LUMINAIRES*

- ### RESPONSIBILITIES

- ### EXCAVATOR'S RESPONSIBILITIES

At the time a line location is completed and it is identified as being in conflict with high-pressure gas facilities, or the line location request indicates boring is required; the SWG representative will notify the excavator of the following requirements.

HIGH PRESSURE OR 6-INCH & ABOVE DISTRIBUTION MAIN

- | Traffic Signal Equipment Legend | |
|---|--|
| Exst | New |
| |  Meter Pedestal |
| |  Uninterruptible Power Supply |
| |  Controller |
| |  #7 Pullbox with Extension |
| |  #7 Pullbox |
|  |  #3 1/2 Pullbox |
| - - - | - - - Underground Conduit |
|  | ⑮ Signal Conduit / Conductor Run # |
|  | ● Signal or Light Pole and Foundation |
|  | Ⓐ Pole or Cabinet Keynote |
| |  Flasher Head – Type F (mod) |
| |  Illuminated Sign for Bicyclists |
| |  Pedestrian Signal Head |
| |  Pedestrian or Bicycle Pushbutton |
|  |  Luminaire |
|  |  Luminaire with Photocell |
| CKTx | Lighting Circuit Number for Signal Poles |
| |  Illuminated Crossing Sign |
| |  #9 Pullbox |

<i>Road</i>	<i>Posted speed (mph)</i>
<i>Wilnot Road</i>	<i>40</i>
<i>Craycroft Road</i>	<i>40</i>
<i>Rosewood Street</i>	<i>25</i>
<i>University Blvd</i>	<i>25</i>
<i>Main Ave</i>	<i>30</i>

UTILITIES

- ## POLES AND SIGNALS

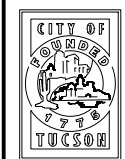
7. *The Contractor shall remove and salvage existing poles, arms, and other equipment that will not be reused in the project to the COT Electric Shop. Call COT Electric Shop, 791-3154, for instructions, at least 48 hours in advance.*
8. *The Contractor shall ensure that the top of the finished pole foundation cap shall be flush with any adjacent sidewalk or edge of ramp. Tops of foundations away from sidewalks and ramps shall extend no more than 4 inches above surrounding finish grade.*
9. *All pedestrian push button assemblies shall be APS (audible vibrotactile type) pushbutton, Campbell Company AGPS 400 or approved equal and shall be mounted at 42 inches above finish grade to center of push button. Locations and accessibility of pushbuttons shall comply with requirements of the Americans with Disabilities Act (ADA). The signs to be used are identified in the 2009 MUTCD as R10-3e in Fig. 2B-26.*
10. *All signal indications shall be LED.*
11. *See Pole Schedule Notes on this sheet for additional requirements.*

CONDUIT AND PULLBOXES

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Approvals		Signatory		Date	Approved _____ 20 <u>21</u>	53 OF 68
					TRANSPORTATION DIRECTOR	
REF. _____ SCALE: _____						
DRWN. BY <u>RCS</u> 20 <u>21</u>	DSGN. BY <u>RCS</u> 20 <u>21</u>	CHKD. BY <u>KT</u> 20 <u>21</u>	PLAN NO. <u>U-2019-016</u>			

TRAFFIC SIGNAL GENERAL NOTES AND LEGEND

TS01 of TS08

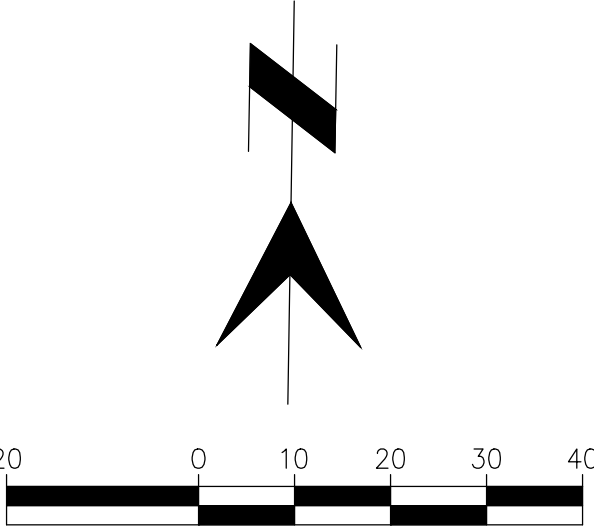
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

3RD STREET BICYCLE BOULEVARD

MAIN AVENUE TO WILMOT ROAD

Traffic Signal Plans

Approvals		Signatory		Date	Approved _____ 20 <u>21</u>	53 OF 68
					TRANSPORTATION DIRECTOR	
REF. _____ SCALE: _____						
DRWN. BY <u>RCS</u> 20 <u>21</u>	DSGN. BY <u>RCS</u> 20 <u>21</u>	CHKD. BY <u>KT</u> 20 <u>21</u>	PLAN NO. <u>U-2019-016</u>			




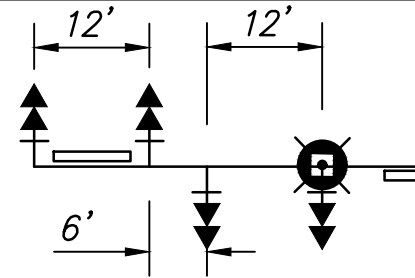




TS02 of TS08

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<div style="text-align: center;"> 100% PRELIMINARY NOT FOR CONSTRUCTION </div>	Approvals		Signatory	Date	Approved _____ 20 <u>21</u>	<div style="text-align: center;"> 54 OF 68 </div>
					TRANSPORTATION DIRECTOR	
					REF. _____ SCALE: _____	
DRWN. BY RCS 20 <u>21</u>		DSGN. BY RCS 20 <u>21</u>	CHKD. BY KT 20 <u>21</u>	PLAN NO. U-2019-016		

CABINET AND POLE SCHEDULE									
CABINET	TYPE	CONTROLLER	AUX CONTROLLER	FOUN-DATION	REMARKS			LOCATION	
	METER PEDESTAL T 1801	MYERS MODEL MEUG-Q-M 100 C-UM	125A 120/240V	T 1801	INSTALL CIRCUIT BREAKERS: (1) 60A/2P: SIGNAL (2) 20A/1P: LUMINAIRES (2) 20A/1P: CROSSING SIGNS			102+75± 26'± Lt	
	M-49	TS-2 COT SUPPLIED	—	TO FIT CABINET	CABINET AND CONTROLLER SUPPLIED BY CITY, INSTALLED BY CONTRACTOR.			102+67± 26'± Lt	
POLE		MAST ARMS		SIGNALS		PED & BIKE PUSHBUTTON TYPE/SIGN	LUMINAIRE	REMARKS	STATION, OFFSET, ELEVATION
NUMBER		TYPE	SIGNAL	LUMIN.	MTG	FACE			
		A 10' T 401	—	—	(1) XI T 909	(1) BIKE SEE SHEET TS8 DETAIL	(1) TYPE 1 2" ADA T 1101 SIGN R9-5 NOTE 10	—	102+53.37, 21.43' Lt
		CCTV-R T 413	50'	20'	(4) II T 901 (1) V T 903 (1) XI T 909	(5) F MOD T 801 (1) PED T 804	(1) TYPE 1 2" ADA T 1101 SIGN R10-3e (L) NOTE 9	SEE NOTE 7	SIGN: SEE NOTE 11 102+41.91, 30.49' Lt
		A 10' T 401	—	—	(1) XI T 909	(1) PED T 804	(1) TYPE 1 2" ADA T 1101 SIGN R10-3e (L) NOTE 9	—	101+70.49, 28.81' Lt
		A 10' T 401	—	—	(1) XI T 909	(1) BIKE SEE SHEET TS8 DETAIL	(1) TYPE 1 2" ADA T 1101 SIGN R9-5 NOTE 10	—	101+64.94, 20.53' Lt

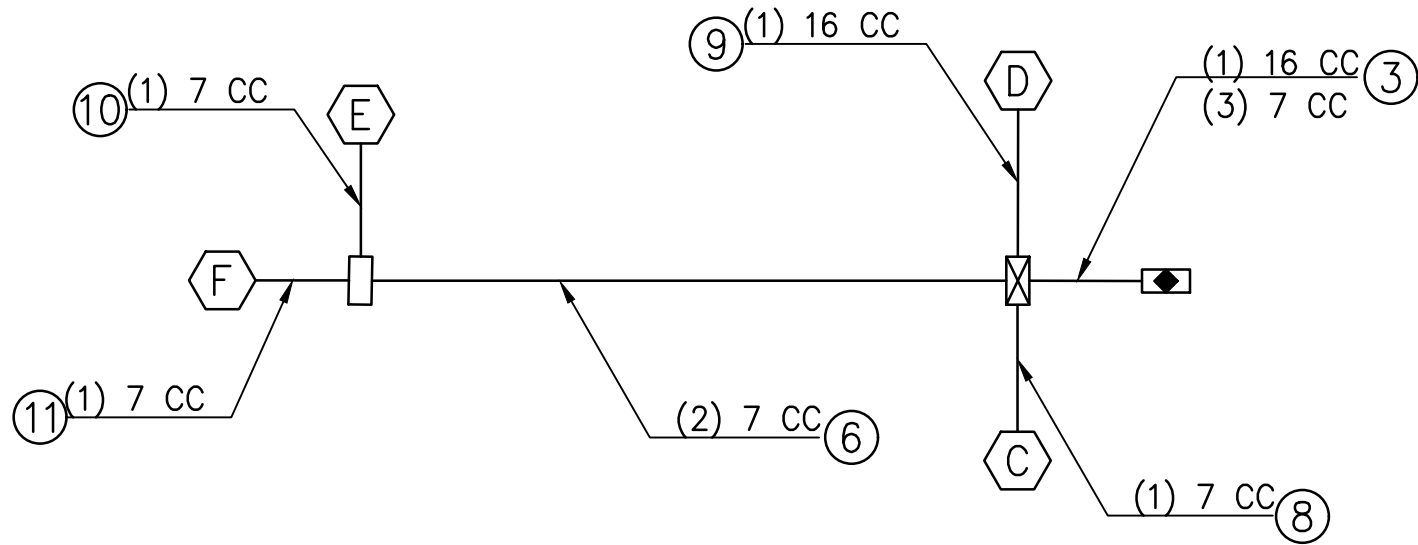
CONDUIT AND CONDUCTOR SCHEDULE GENERAL NOTES

- An 18-gauge 4-conductor shielded cable shall be run unspliced from each pedestrian station to the nearest pedestrian head associated with the pedestrian station's phase.
- The IMSA 16-conductor and 7-conductor cables shall be continuous and unspliced from the controller cabinet to the side-mounted signal terminal block on the pole. The mast arms' 7-conductor cables shall then run from each signal head to the terminal block. All pole signal head splicing shall occur solely at the terminal block.
- A crimp connection shall be used for splicing lighting common (white) and insulated bond (green) or bare bond conductors in pull boxes.
- Lighting wiring from controller to pullboxes shall be type THW. Lighting wiring from pullboxes to luminaires shall be type XHHW.

CONDUIT AND CONDUCTOR SCHEDULE															
		CONDUIT—CONDUCTOR RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13
		CONDUIT SIZE (INCHES)	2.5	2	4	4	4	4	4	2	3	2	2	4	2
		# OF IMSA 16—CONDUCTOR CABLES			1						1				
		# OF IMSA 7—CONDUCTOR CABLES			3			2		1		1	1		
AWG	COLOR/ TRACER	CIRCUIT PHASE													
#14 AWG IMSA 19—1 MULTI—CONDUCTOR CABLE	BLK	PED SIGNAL WALK	T E P	S I G N A L & L I G H T I N G	P O W E R	F (F)	E (E)	D (D)	E (E)	D (D)	E (E)	D (D)	E (E)	D (D)	E (E)
	WHT	SIGNAL COMMON													
	RED	ØA SIGNAL RED													
	GRN	ØA SIGNAL GREEN													
	ORG	PED. PUSHBUTTON													
	BLU	ØA YELLOW													
	WHT/BLK	LOW VOLTAGE COMMON													
	RED/BLK	ØA AUX. SIGNAL RED													
	GRN/BLK	ØA AUX. SIGNAL GREEN													
	ORG/BLK	SPARE (PED. PUSHBUTTON)													
	BLU/BLK	ØA AUX. SIGNAL YELLOW													
	BLK/WHT	PED. SIGNAL DON'T WALK													
	RED/WHT	SPARE													
	GRN/WHT	SPARES													
	BLU/WHT	ØB LEFT TURN SIGNAL GREEN													
BLK/RED	ØB LEFT TURN SIGNAL YELLOW														
		CONDUIT—CONDUCTOR RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11		
#10 THW	BLK	STREET LIGHT CIRCUIT #1 HOT			1						1				
	RED														
	WHT	STREET LIGHT COMMON			1						1				
	BLK														
	RED	CROSSING SIGN CIRCUIT #2 HOT			2						2				
	WHT	CROSSING SIGN COMMON			1						1				
#8	BARE	EQUIPMENT BOND		1	1	1	1	1	1	1	1	1	1		
#6 XHHW	BLK, RED	SIGNAL POWER HOT		2											
	WHT	SIGNAL POWER NEUTRAL		1											
IMSA 3—COND. CABLE	BLK	TO PHOTOCELL			1						1				
	WHT	COMMON			1						1				
	RED	FROM PHOTOCELL			1						1				
# 10 THW/ XHHW	GRN	TRACER												1	1

CABINET AND POLE SCHEDULE NOTES

- The Contractor shall have the site Blue Staked prior to beginning any excavation work. If clearances of less than 5' from underground lines are discovered, Contractor shall pothole to verify the exact clearance.
- All equipment, materials, and construction shall meet or exceed the current PAG "Standard Specifications for Public Improvements" and "Standard Details for Public Improvements."
- The Contractor shall pick up the traffic signal control cabinet from the City of Tucson after testing. Contact Roger Kestler at 520-837-6805 for details.
- Power cables shall be separated from signal cables as much as possible.
- All signal heads on mast arms shall be metal.
- All signal indications shall be LED. Pedestrian signals shall be countdown style.
- Luminaires shall have 7-pin photocell receptacles and ROAM nodes.
- Pedestrian push buttons shall be audible vibrotactile Campbell AGPS or equal. Bicycle push buttons shall be piezo electric, non-moving discharge Campbell 4-EVR or equal. All push buttons shall be mounted at 42 inches above finish grade to center of push button. Locations and accessibility of push buttons shall comply with requirements of the Americans with Disabilities Act (ADA).
- Furnish and install pedestrian push button sign R10-3e as shown in Figure 2B-26 in section 2B.51 of the 2009 MUTCD.
- Furnish and install bicycle pushbutton sign R9-5 (9" x 12").
- Metro crosswalk sign for northbound traffic to be suspended from flag pole mount, minimum 17' vertical clearance. Metro crosswalk sign for southbound traffic to be suspended from signal arm, minimum 17' vertical clearance.
- The meter pedestal shall comply with TEP Electrical Service Requirement SR-409 and SR-452.
- The Contractor see Special Provisions for service requirement.
- All new pole foundations shall be flush with adjacent new/exst ramp or ramp curb, which ever is applicable.



MULTI-CONDUCTOR SIGNAL CABLE DIAGRAM

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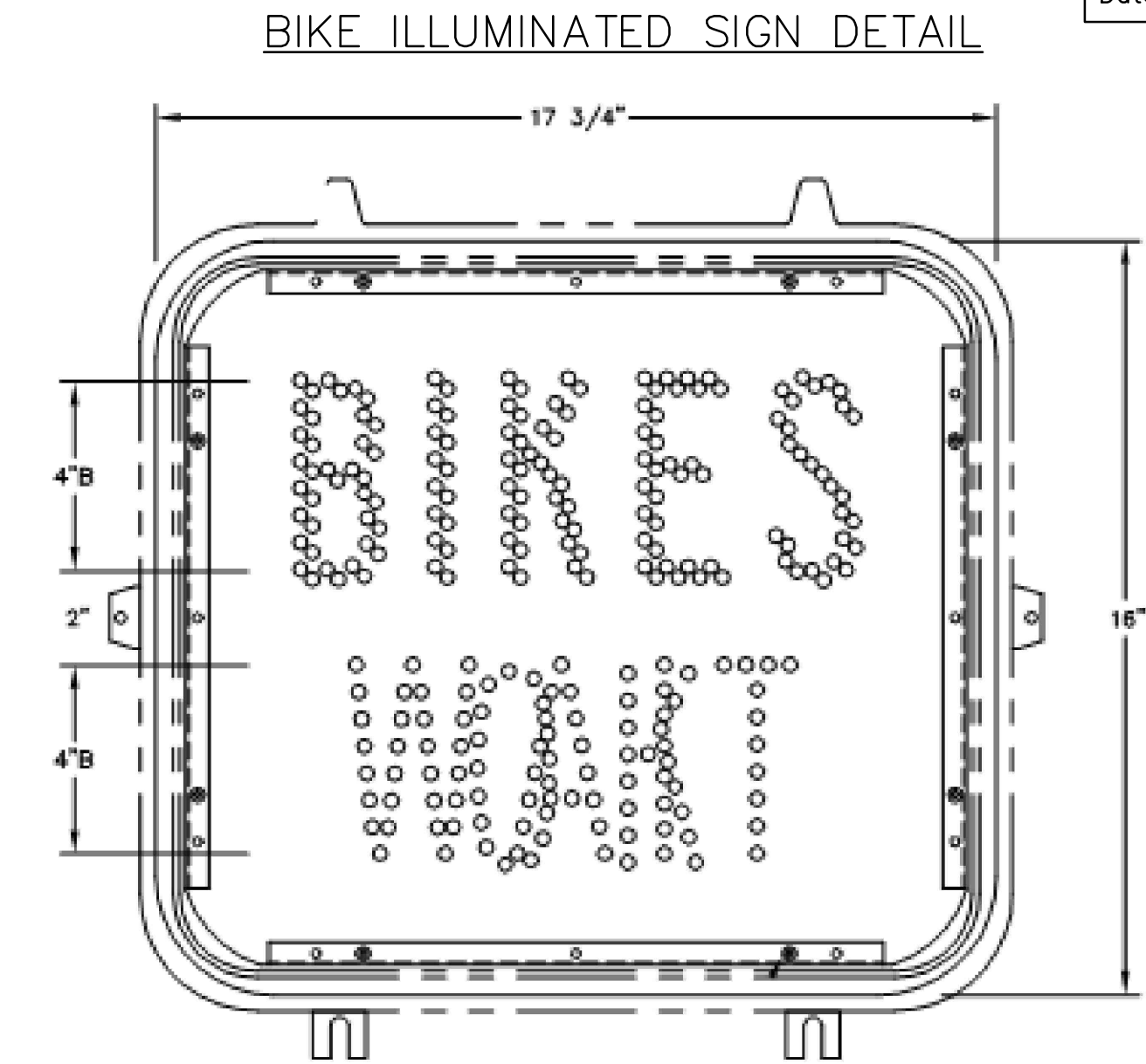
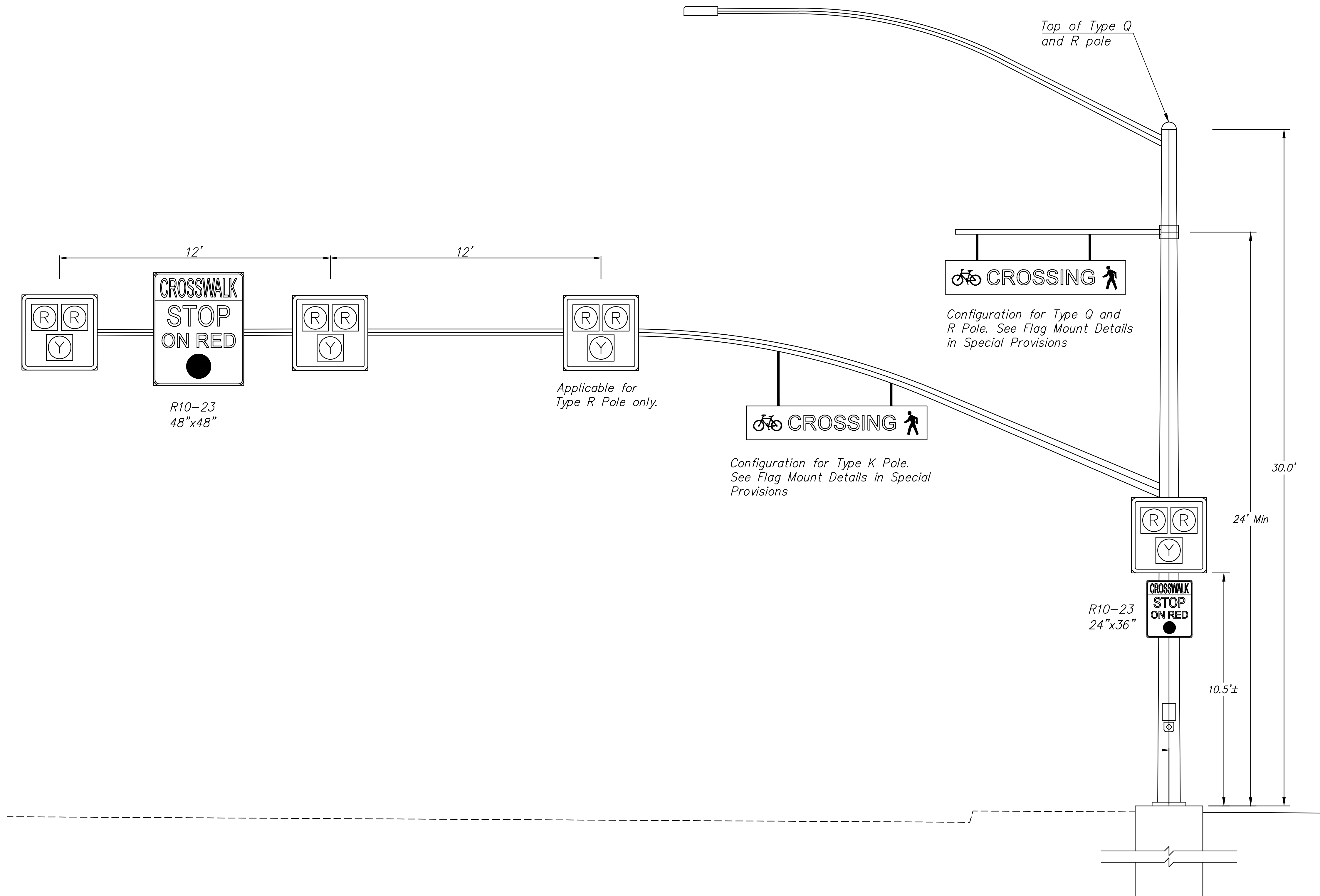
NO.	DATE	REVISION	BY	CHKD.	APPR.

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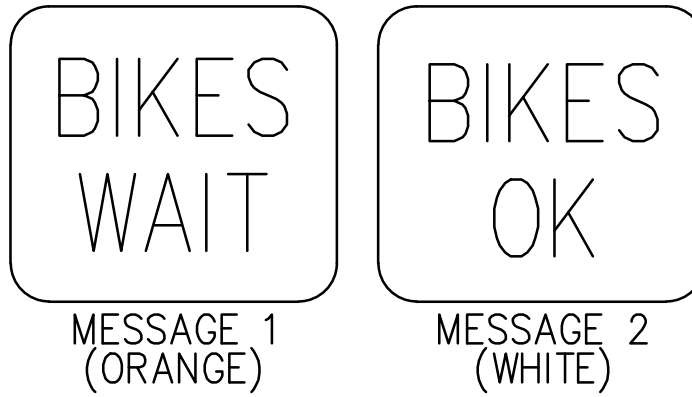


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CABINET & POLE SCHEDULE CONDUIT & CONDUCTOR SCHEDULE			TS03 of TS08			
DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION						
3RD STREET BICYCLE BOULEVARD MAIN AVENUE TO WILMOT ROAD UNIVERSITY BOULEVARD AT MAIN AVENUE						
Approvals	Signatory	Date	Approved _____ 20 21	55 OF 68		
			TRANSPORTATION DIRECTOR			
REF. _____ SCALE: _____			PLAN NO. U-2019-016			
DRWN. BY <u>RCS</u> 20 21	DSGN. BY <u>RCS</u> 20 21	CHKD. BY <u>KT</u> 20 21				



1. Messages formed by rows of high-intensity LEDs. LEDs spaced at $\frac{9}{16}$ O.C. (nominal).
2. Message displays and colors are shown below.
3. Messages shall completely blank out when not energized.
4. Messages shall be visible anywhere within a 15-degree cone centered about the optical axis.
5. For use with 16" ICC or McCain housing.
6. Face plate shall be acid-etched and painted with two coats of zinc-chromate primer, and finished with two coats of non-reflective flat black enamel.

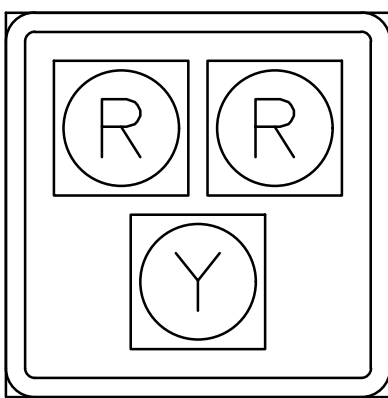


SIGNAL OPERATION

Interval / condition	Pedestrian signal	Bike illuminated sign	F Mod head	Vehicle control
No pedestrians or bicyclists present	Steady upraised hand	Steady BIKES WAIT	Dark	Free to proceed
Call from pedestrian or bicycle pushbutton	Steady upraised hand	Steady BIKES WAIT	Flashing yellow	Proceed only if safe
Yellow interval for vehicles	Steady upraised hand	Steady BIKES WAIT	Solid yellow	Prepare to stop
Pedestrian walk interval	Walking person	BIKES OK	Solid red (both)	Stop
Pedestrian clearance interval	Flashing upraised hand	Flashing BIKES WAIT	Alternating flashing red	Proceed after stop if crosswalk is cleared



(Double Sided)
CROSSING SIGN DETAIL



- (3) 12" indications, (2) red (R) over (1) yellow (Y), all LED
- Backplate extending 5 inches from signal housings
- 2" yellow reflective border on backplate
- 2"± spacing between signal housings, depending on signal mounting assembly

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TRAFFIC SIGNAL DETAILS
TS08 of TS08

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

3RD STREET BICYCLE BOULEVARD
MAIN AVENUE TO WILMOT ROAD

Approvals	Signatory	Date	Approved _____ 20 21	60 OF 68
TRANSPORTATION DIRECTOR				REF. _____ SCALE: _____
DRWN. BY <u>RCS</u> 20 21 DSGN. BY <u>RCS</u> 20 21 CHKD. BY <u>KT</u> 20 21				PLAN NO. <u>U-2019-016</u>